



Effective Health Care Program

Allergy Shots and Allergy Drops for Adults and Children

A Review of the Research



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Is This Information Right for Me?

This information may be helpful to you if:

- Your doctor* has said that you or your child has allergies or mild asthma from allergies caused by things in the air, such as pollen, dust, pet dander, or mold.
- You are considering getting allergy shots or taking allergy drops that you put under your tongue (allergy shots and drops are called “allergy immunotherapy,” pronounced im-MUNE-oh-THER-uh-pee).
- You want to know what research says about how well allergy shots and allergy drops work to improve allergy and asthma symptoms.

Note: This summary only talks about allergies from particles in the air. The information in this summary does **not** apply to food allergies, allergies from things that touch your skin (such as latex, detergents, metals, or hair dyes), allergies to insect stings, or allergies to medicines.

The information in this summary is **not** for people with severe asthma.

In the research for this summary, adults with asthma:

- Had mild to moderately severe asthma in studies on allergy shots
- Had mild asthma in studies on allergy drops

Note: Allergy drops (also called “sublingual immunotherapy”) are a liquid that you put under your tongue. They are not eye drops.

What will this summary cover?

This summary will cover:

- What allergies are
- How allergies are treated
- What researchers found about how well allergy shots and allergy drops work
- Possible side effects of allergy shots and allergy drops

This summary can help you talk with your doctor about whether allergy shots or allergy drops might be right for you or your child.

* In this summary, the term “doctor” refers to your (or your child’s) health care professional, including your primary care physician, pediatrician, allergist, otolaryngologist (ear, nose, and throat doctor), nurse practitioner, or physician assistant.

Where does the information come from?

Researchers funded by the Agency for Healthcare Research and Quality (AHRQ), a Federal Government research agency, reviewed 142 studies on allergen-specific immunotherapy to treat allergies and/or mild asthma from allergies published between January 1967 and May 2012. The report was reviewed by clinicians, researchers, experts, and the public. You can read the report at www.effectivehealthcare.ahrq.gov/allergy-asthma-immunotherapy.cfm.



Understanding Your Condition

What are allergies?

An allergy is a reaction your body has to a substance around you. This summary talks about allergies to particles in the air such as pollen, dust, pet dander, or mold. Allergies happen when your immune system (the system that protects your body from germs) reacts to one of these particles (called “allergens”).

This reaction by the immune system is what causes allergy symptoms. Allergy symptoms from allergens in the air (airborne allergens) can include:

- Sneezing
- Stuffy or runny nose
- Itchy nose and throat
- Coughing
- Mucus dripping down your throat
- Itchy, watery, or swollen eyes
- Pressure in your nose, cheeks, and forehead
- A skin rash or itchy skin

In some people, allergies can also cause asthma symptoms (wheezing, coughing, shortness of breath, or tightness in the chest).

Some allergies, such as pollen allergies, only happen at certain times of the year (for example, when trees and grass release their pollen). These are called “seasonal allergies” or “hay fever.” Other allergies, such as dust allergies, can happen year round. These are called “perennial allergies.” A person can have only seasonal allergies, only perennial allergies, or both types of allergies.

How common are allergies and asthma from allergies?

- About 20 out of every 100 people in the United States have allergies.
- About 9 out of every 100 people in the United States have asthma.
 - In more than half of people with asthma, the asthma is triggered by an allergy.



Understanding Your Options

How are allergies treated?

First, your doctor will probably talk with you about your symptoms and medical history and examine you to determine what allergies you have. Your doctor may suggest allergy medicines to help treat your allergy symptoms. Your doctor may also suggest ways to avoid the allergens that might be causing your allergies.

Allergy Medicines

Common allergy medicines include over-the-counter antihistamines (pronounced an-te-HISS-tuh-meens) such as fexofenadine (Allegra®), loratadine (Claritin®), or cetirizine (Zyrtec®). Your doctor may prescribe steroids that come as a nasal spray such as fluticasone propionate (Flonase®) or mometasone furoate (Nasonex®).

Ways To Avoid Allergens

Your doctor may also suggest ways to avoid allergens (particles in the air that can cause allergies), such as having your carpets and drapes cleaned often, using an air filter, or using a special mattress cover and pillow case to lower the amount of dust allergens you breathe in while you sleep.

If allergy medicines and trying to avoid allergens do not lessen your symptoms enough, your doctor may do tests to try to determine the cause of your allergies. Skin or blood tests can be done to see which allergens cause a reaction. Once you find the cause of your allergies, your doctor may suggest allergy shots or allergy drops.

Allergy Shots or Allergy Drops

This type of treatment works differently than allergy medicines. Allergy shots and drops work to lessen your body's reaction to an allergen. Your doctor may suggest allergy shots or drops to make your symptoms happen less often or to make them less severe.

- **Allergy shots:** shots that are given under the skin (often in the upper arm) usually at the doctor's office
- **Allergy drops:** a liquid you put under your tongue that you can take at home (this is called "sublingual immunotherapy")

What are allergy shots and allergy drops?

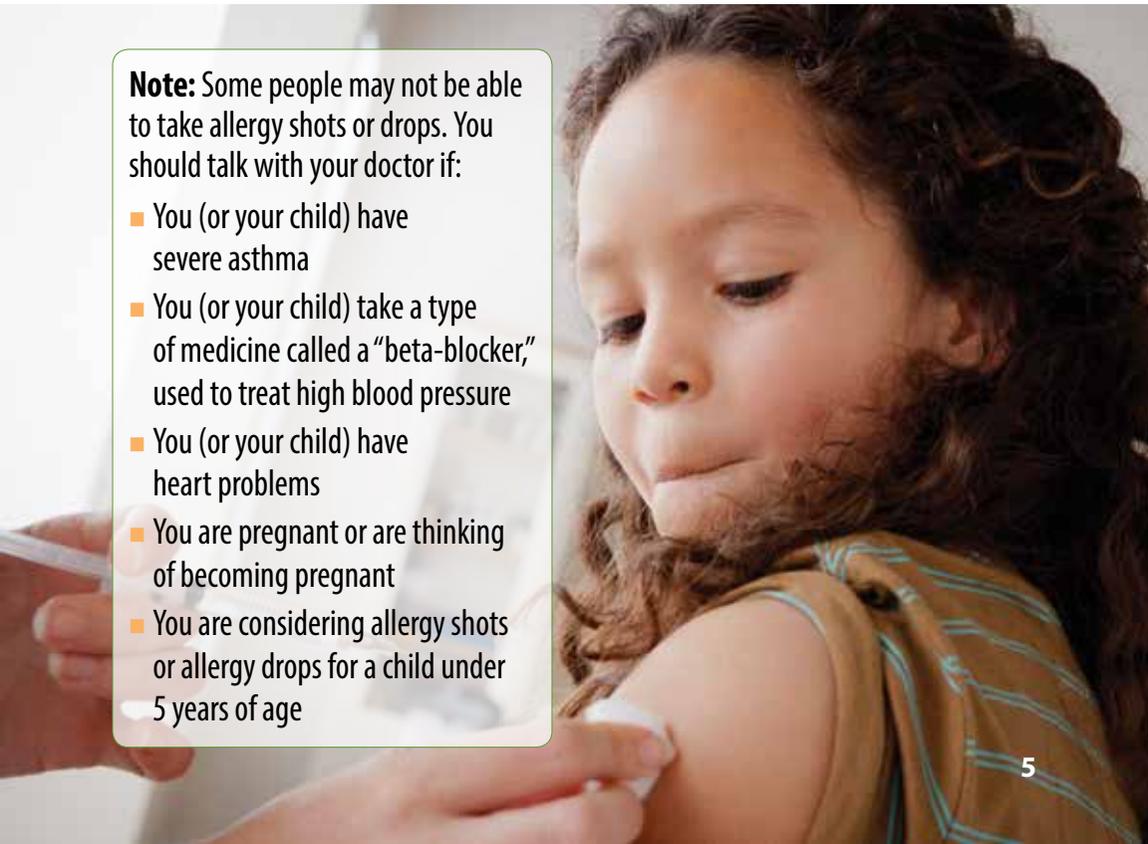
Allergy shots and allergy drops help your immune system become less sensitive to allergens. The shots and drops contain a tiny amount of the allergens that cause your allergies. For example, if you are allergic to oak tree pollen, your shots or drops will have a tiny amount of oak tree pollen in them. Allergy shots and drops both contain the allergens that cause your allergies. The difference between them is simply in how they are given.

The amount of the allergen in allergy shots or drops is so small that your immune system likely will not react strongly to it. Your doctor will talk with you about what to do if you have a strong reaction.

Your doctor will slowly put more of the allergen into your shots or drops until your immune system becomes less sensitive to the allergen. This means your immune system will not react strongly when you breathe in the allergen. Over time, your immune system will start to tolerate the allergen, and your allergy symptoms will get better.

Note: Some people may not be able to take allergy shots or drops. You should talk with your doctor if:

- You (or your child) have severe asthma
- You (or your child) take a type of medicine called a “beta-blocker,” used to treat high blood pressure
- You (or your child) have heart problems
- You are pregnant or are thinking of becoming pregnant
- You are considering allergy shots or allergy drops for a child under 5 years of age



Comparing Allergy Shots and Allergy Drops

	Allergy Shots	Allergy Drops
How are they taken?	The shots are given under the skin (often in the upper arm) usually at the doctor's office.	The liquid drops are placed under the tongue and are usually taken at home.
How often do you take them?	One or more shots each time you go to the doctor's office: <ul style="list-style-type: none">■ Once or twice a week for the first few months■ Once or twice a month after that	A few times a week or every day
How long do you take them?	3 to 5 years (or sometimes longer)	Typically 3 to 5 years (or sometimes longer)
Are they approved by the U.S. Food and Drug Administration (FDA) to treat allergies and asthma caused by allergies?	Yes	No, allergy drops are not yet approved by the FDA.* But they are approved and commonly used in Europe and other parts of the world. Allergy drops are available in the United States, and doctors are starting to prescribe them.

* Because allergy drops are not yet approved by the FDA, they may not be covered by your health insurance.

What have researchers found about how well allergy shots and allergy drops work?

In adults:

- Both allergy shots and allergy drops improve allergy and mild asthma symptoms.
- Both allergy shots and allergy drops lessen the need to take allergy and asthma medicines.
- Both allergy shots and allergy drops improve quality of life.

In children:

- Both allergy shots and allergy drops improve allergy and mild asthma symptoms.
- Allergy drops lessen the need to take allergy and asthma medicines.
- Allergy shots also appear to lessen the need to take allergy and asthma medicines, but more research is needed to know this for sure.

Researchers also found:

- There is not enough research to know if allergy shots or allergy drops work better.



What are the possible side effects of allergy shots and allergy drops?

Allergy shots and allergy drops are safe, and side effects are usually mild.

Common side effects of allergy shots include:

- Itching, swelling, and redness at the place where the shot was given
- Headache
- Coughing
- Tiredness
- Mucus dripping down your throat
- Sneezing

Common side effects of allergy drops include:

- Throat irritation
- Itching or mild swelling in the mouth

Note: Although it is rare, allergy shots and allergy drops could cause a life-threatening allergic reaction called “anaphylaxis” (pronounced an-uh-fuh-LAK-sis). Symptoms of anaphylaxis can include severe swelling of the face, throat, or tongue; itching; a skin rash; trouble breathing; tightness in the chest; wheezing; dizziness; nausea; diarrhea; or loss of consciousness.

If you or your child has any of these symptoms after getting an allergy shot or taking allergy drops, call the doctor right away. Anaphylaxis must be treated immediately with a shot of epinephrine, a type of hormone that regulates your heart rate and breathing passages.

What are the costs of allergy shots and allergy drops?

The costs to you for allergy shots and allergy drops depend on your health insurance. Because allergy drops are not yet approved by the U.S. Food and Drug Administration (FDA), they may not be covered by your health insurance. The costs also depend on how many allergens are in your allergy shots or allergy drops. Because allergy shots are usually given at the doctor's office, you may have to pay for an office visit each time you go for a shot.

Making a Decision

What should I think about when deciding?

There are many things to think about when deciding if allergy shots or allergy drops are right for you or your child. You may want to talk with your doctor about:

- How severe your (or your child's) allergy or asthma symptoms are
- How well you are able to avoid or reduce allergens in your environment (for example, cleaning carpets and drapes or using an air filter, mattress cover, or special pillow case)
- How well allergy medicines (antihistamines or steroid nasal spray) work to improve your (or your child's) symptoms
- Possible benefits and side effects of allergy shots or allergy drops
- Which might work better to improve your (or your child's) allergy or asthma symptoms—allergy shots or allergy drops
- Which better fits your preferences and lifestyle—allergy shots or allergy drops
 - For example, would it be easier to take allergy drops every day or go to the doctor's office every few days for a shot?
- The costs of allergy shots or allergy drops

Ask your doctor

- What are the best ways for me to avoid or reduce allergens in my environment?
- Could allergy shots or drops help me (or my child)?
- Do any of my (or my child's) medical conditions affect my (or my child's) ability to take allergy shots or allergy drops?
- Which do you think would be better—allergy shots or allergy drops?
- How long will it take for the allergy shots or allergy drops to start helping?
- How long will I (or my child) need to take the allergy shots or allergy drops?
- How long will allergy shots or allergy drops improve my (or my child's) allergy or asthma symptoms?
- How much would allergy shots cost? How much would allergy drops cost?
- Are there side effects that I need to call you about right away or that would require me to go to an emergency room? If so, what are they? What should I do? When are they likely to happen?

Other questions:

Write the answers here:

Source

The information in this summary comes from the report *Allergen-Specific Immunotherapy for the Treatment of Allergic Rhinoconjunctivitis and/or Asthma: Comparative Effectiveness Review*, March 2013. The report was produced by the Johns Hopkins University Evidence-based Practice Center through funding by the Agency for Healthcare Research and Quality (AHRQ).

For a copy of the report or for more information about AHRQ and the Effective Health Care Program, go to www.effectivehealthcare.ahrq.gov/allergy-asthma-immunotherapy.cfm. Additional information came from the MedlinePlus® Web site, a service of the National Library of Medicine and the National Institutes of Health. This site is available at www.nlm.nih.gov/medlineplus.

This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX. People with allergies to airborne allergens reviewed this summary.

